

Application and technology

(Geopolymers in semi-industrial and industrial production)



Boura P. and Ertl Z.
Czech Development Agency (ČRA), Prague, Czech Republic

Wall facing

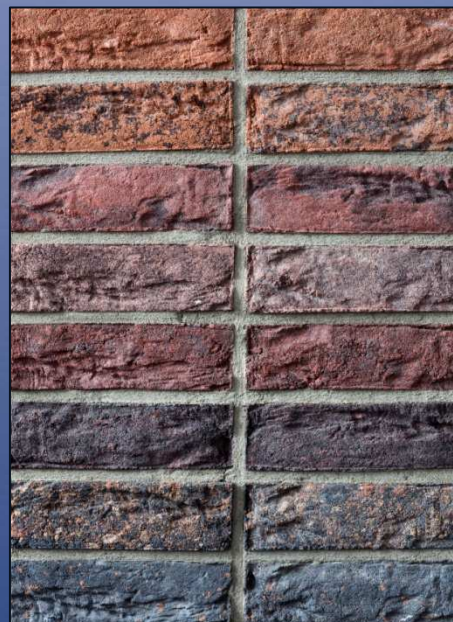


Imitation of slate clay

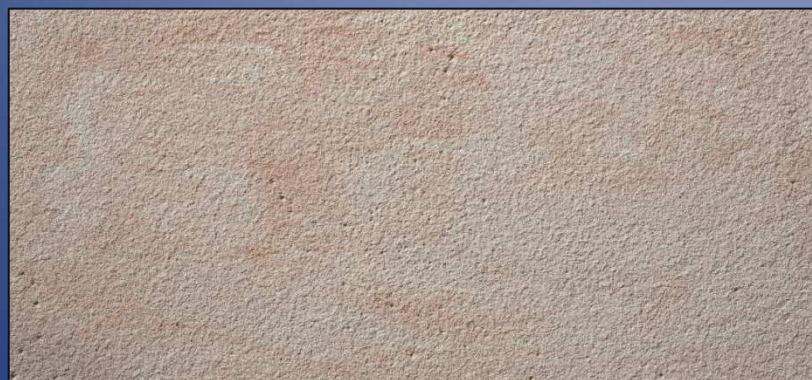
- casted and vibrated in the plastic molds
- thickness of 30 mm

Tiles in form and
color of bricks

- tamped technology
- thickness 12 mm



Wall tiles



Imitation of sandstone

- casted and vibrated in the molds
- size 500x250, thickness 18mm
- finished by steel blasting

Polishing plates

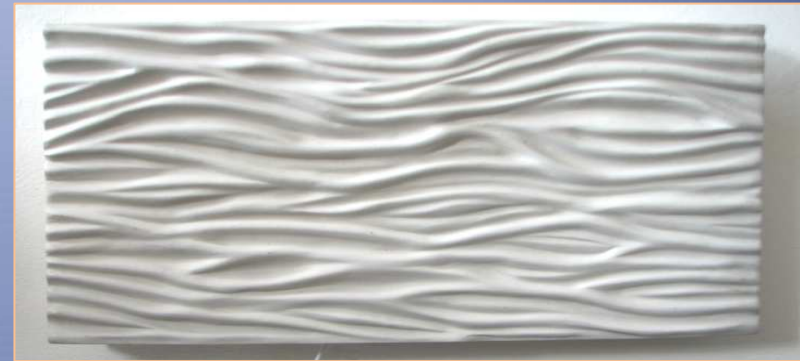


Heating panels

Radiator heats the geopolymer mass up to the 100°C by incorporated electric heating cable. The temperature is checked by build in thermostat. The panel emits heat similar to comfortable tile stoves.

Accumulated heat saves electric energy and saving depends on the type of filler (basalt, marble, granite, etc.)

Energy saving up to 35 %.



Fussed glass molds

The moulds for fussed glass technology with possibility to create a long formats.



The view into
the furnace
(2.5 m length)



The detail of fussed
glass coping mould
nodulation, heated on
830°C with 25 minutes
dwell.

The GP-composite is protected by the Czech Intellectual Property

Memorial panels in geopolymer composite (imitation of bronze)

Geopolymer composite filled by porcelain shards allows perfect copies of all details in inscription.

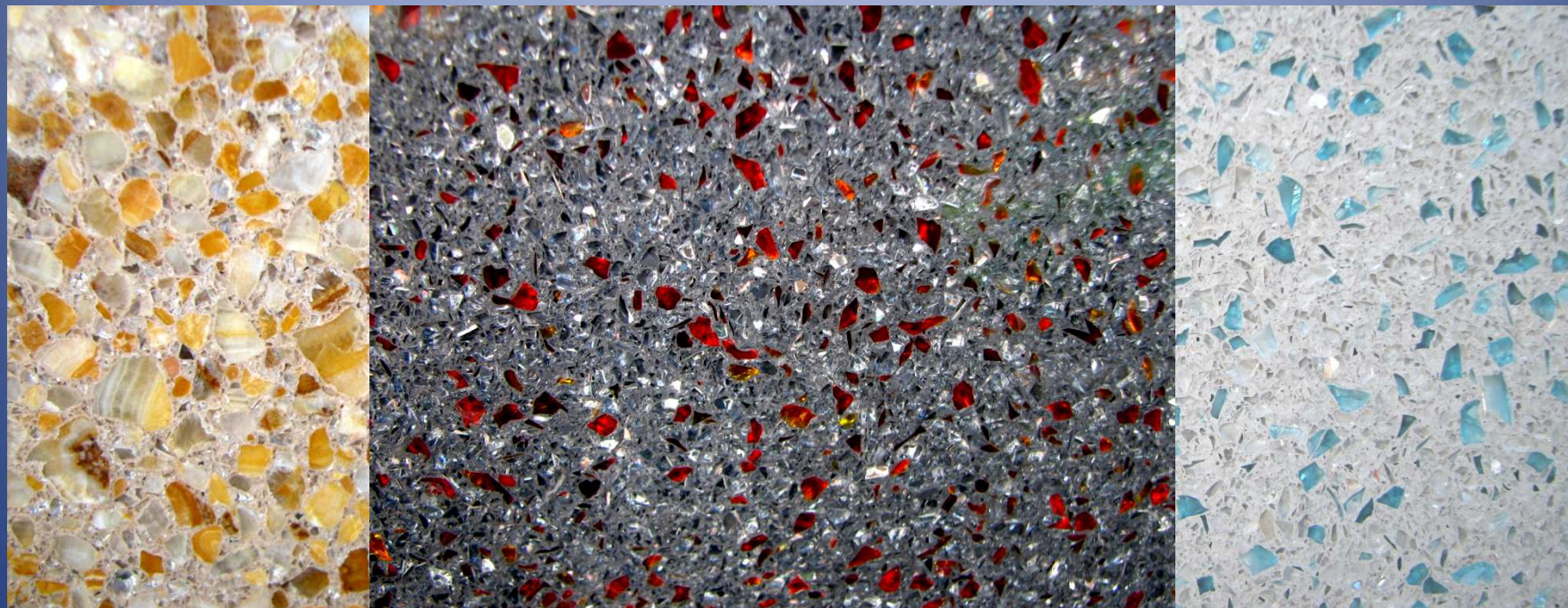


Powdered bronze applied directly to the mold first layer gives typical greenish color of highly weathered copper.



Finished plates with powdered bronze applied into shellac.

Large dimension wall facing tiles



The Geopolymer composite with the colored glass and mirror shards in pigmented matrix.

- Tile size up to 1000x500mm
- thickness 7-12mm

The repair of industrial concrete floor



Fixing an old industrial floor close to the rails in steel producing factory. The deepness of floor gaps were from 2 mm to 20 cm.

The geopolymer-slag composite was filled with sand and gravel in big holes in quantities of 70 wt. %.

The setting time was 2 hours, hardening in 4 hours at ambient conditions.



Vibrocompacting

- The most industrial way – vibrocompacting of building elements is in focus of our interest and was tested in 2010.
- The development of geopolymer/sand composite is ready for industrial application in the autumn of this year.



Thanks for your attention